Ocean gales and storms, May, 1929—Continued

Vessel	Voyage		Position at time of lowest barometer		Gale began	Time of lowest barometer	Gale ended	Lowest barometer	Direction of wind when gale began	Direction and force of wind at time of lowest barometer	Direction of wind when gale ended	Highest force of wind and direction	Shifts of wind near time of lowest barometer
	From—	To—	Latitude	Longitude									
North Pacific Ocean			° ′	° ′				*Inches*					
Shabonee, Br. S. S.	Yokohama	San Pedro	44 30 N	175 10 W	May 3	6 a, 3	May 3	29.53	SSW	SE, 8	SSW	SE, 10	SE-SSW.
Clyde Maru, Jap. S. S.	Miike	Grays Harbor	48 41 N	172 10 W	2	1 a, 3	5	29.08	S	S	SSW	SE, 10	S-SE-SW.
New York, Am. S. S.	Hong Kong	San Francisco	46 10 N	172 31 E	2		5	28.69	S	Calm	W	W, 10	E-O-W.
California, Am. S. S.	Otaru	do	48 00 N	176 50 W	3	4 a, 3	4	28.96	SE	SW, 7	SW	SE, 11	SSW-SW.
Kohnan Maru, Jap. S. S.	Miike	Portland	47 34 N	571 55 E	3	9 p, 3	5	28.65	N	WNW, 9	WSW	WNW, 9	N-W-WSW.
Atlanta City, Am. S. S.	Dairen	Honolulu	31 33 N	129 30 E	6	6	7	29.68	SE	SE, 7	SW	SSW, 9	
Satanta, Br. S. S.	San Pedro	Shanghai	31 00 N	133 30 E	7	7	8	29.82	S	S, 8	W	S, 8	S-SW.
Columbia Maru, Jap. M. S.	Vancouver	Yokohama	50 30 N	179 30 W	10	4 p, 11	11	29.16	S	NNE, 8	N	ENE, 9	NE-NNE-N.
Ryujin Maru, Jap. S. S.	Miike	Vancouver	49 19 N	178 30 W	11	1 p, 11	11	28.83	ESE	NE, 8	NE	NE, 9	Steady.
Toyama Maru, Jap. S. S.	Yokohama	Victoria	50 08 N	167 10 W	11	4 p, 12	12	29.04	E	SE, 2	SSW	E, 9	ESE-E-SE.
Illinois, Am. S. S.	Portland	Shanghai	51 40 N	170 35 W	13	2 a, 13	17	29.01	W	W, 8	WNW	W, 8	W-S-W.
Toba Maru, Jap. S. S.	Yokohama	San Francisco	45 49 N	148 30 W	19	1 a, 20	21	28.88	SE	SE, 8	SW	SE, 8	
Golden Fleece, Am. S. S.	Dairen	do	47 20 N	156 00 W	19	11 p, 19	22	28.94	N	W, 9	W	W, 10	NW-W.
Pennsylvania, Am. S. S.	Hong Kong	do	29 50 N	129 06 E	22	8 a, 22	22	29.57	SE	NE, 8	N	NE, 8	SE-NE-N.
Irion, Br. S. S.	Yokohama	Victoria	36 51 N	147 02 E	23	Mdt, 24	24	29.23	SE	S, 6	SW	S, 8	Slight.
La Perla, Am. S. S.	San Jose	San Francisco	33 38 N	120 18 W	24	8 a, 24	26	29.93	W	W, 7	NW	NW, 8	W-NW.
Arabia Maru, Jap. S. S.	Victoria	Yokohama	53 00 N	158 30 W	25	8 a, 26	27	29.02	ESE	SE, 8	W	W, 8	SE-W.
Sylvan Arrow, Am. S. S.	San Pedro	Balboa	14 34 N	95 41 W	29	2 a, 30	30	29.60	E	ESE, 8	S	ESE, 8	ENE-ESE.
Tuscaloosa City, Am. S. S.	New York	Honolulu	14 28 N	97 26 W	29	2 p, 30	30	29.48	SW	E, 11	NW	E, 11	SSE-E-NE.
Pennsylvanian, Am. S. S.	Los Angeles	New York	15 00 N	97 30 W	30	9 p, 30	31	29.21	SE	NE, 12	SE	NE, 12	NE-SE.
Nebraskan, Am. S. S.	New York	San Francisco	15 05 N	97 42 W	30	Noon, 31	June 1	29.71	SSW	SSW, 8	W	SW, 8	SSW-W.
South Atlantic Ocean													
Ocean Prince, Br. S. S.	Buenos Aires	St. Vincent	34 11 S	52 51 W	8	7 p, 8	May 8	29.65	NNW	NNW	NNW	NNW, 10	Steady.
South Pacific Ocean													
Raisdale, Br. S. S.	Panama	Auckland	33 01 S	148 00 W	5	3 a, 5	5	29.63	WSW	WSW, 7	SW	WSW, 9	Do.
Do	do	do	36 28 S	179 20 E	12	12	14	29.86	E	E, 4	E	E, 9	Do.
Joseph Seep, Am. S. S.	Buenos Aires	Talara	48 40 S	77 20 W	9	7 p, 11	13	29.25	N	W, 2	W	NW, 10	

NORTH PACIFIC OCEAN

551.506 (265.2)

By WILLIS E. HURD

Cyclonic conditions over the northern part of the ocean were somewhat brisker in May than in April, and the average atmospheric pressure in the Aleutians and the Bering Sea was lower than in the preceding month, and considerably below the normal. The Aleutian cyclone intensified on the 3d and 4th in upper midocean, and again from the 12th to about the 20th from the Alaskan Peninsula westward. From the 20th to the 23d it affected principally the western waters of the Gulf of Alaska, but thereafter to the end of the month it was shallow and of little influence.

The California-Pacific anticyclone was abnormally well developed practically throughout the month, being little disrupted by low pressure areas coming within its usual boundaries. Anticyclonic conditions on the average extended from the eastern part of the Gulf of Alaska southward and thence westward almost to the Asiatic coast, near which the HIGH was considerably broken by numerous small cyclones that came from the continent or gathered in adjoining waters. At Midway Island the average pressure, 30.19 inches, was the highest in May for many years.

Barometric data for several island and mainland coast stations in west longitudes are given in the following table.

TABLE 1.—*Averages, departures, and extremes of atmospheric pressure at sea level at indicated hours, North Pacific Ocean and adjacent waters, May, 1929*

Stations	Average pressure	Departure from normal	Highest	Date	Lowest	Date
	Inches	*Inch*	*Inches*		*Inches*	
Point Barrow [1]			30.48	5th	29.92	8th.
Dutch Harbor [2 3]	29.66	−0.24	30.20	29th	29.06	12th.[4]
St. Paul [2 5]	29.66	−0.20	30.30	29th	28.98	17th.
Kodiak [2]	29.83	−0.04	30.40	12th	29.08	22d.
Midway Island [2 3]	30.19	+0.10	30.34	26th	29.98	29th.
Honolulu [6]	30.05	0.00	30.16	16th	29.91	28th.
Juneau [6]	30.08	+0.09	30.38	10th	29.69	24th.
Tatoosh Island [6 7]	30.11	+0.07	30.47	9th	29.71	30th.
San Francisco [6 7]	30.00	+0.02	30.19	8th	29.79	26th.
San Diego [6 7]	29.94	+0.01	30.13	8th	29.69	26th.

[1] For 18 days, no average computed.
[2] P. m. observations only.
[3] For 29 days.
[4] And on other dates.
[5] For 30 days.
[6] A. m. and p. m. observations.
[7] Corrected to 24-hour mean.

Gales of force 8 and upward occurred on about 15 days of the month, being of about the same frequency as in April, although less widely distributed over the usual stormy portions of the sea. Strong to whole gales, however, were more frequent along the northern steamer routes than in the preceding month, partly owing to the greater fluctuating developments of the Aleutian LOW; so, although the month can hardly be called a stormy one, its weather was rougher over portions of the trans-Pacific passages than that of April.

Few traveling cyclones of more than very moderate intensity appeared on the North Pacific during May. In extratropical waters a cyclone that first appeared as a depression in eastern China on the 20th, developed some intensity south of Japan on the 22d, causing fresh northeasterly gales over the eastern part of the Yellow Sea. On the 23d the storm deepened as it skirted the Japanese east coast, although still no gales higher than fresh were reported. On the 24th to 26th, continuing barometrically low, it moved north-northeastward across the Kuril Islands and entered the Bering Sea, where it merged with the Aleutian cyclone. In tropical waters the only typhoon of the month, and not of great severity, is described in a following article by the Rev. José Coronas, of the Philippine Weather Bureau.

From May 29 to June 1 a tropical cyclone existed south and west of the Gulf of Tehuantepec. Little is known of its activities beyond the fact that it attained great violence on the 30th and was apparently traveling west-northwestward not far from the Mexican coast. During the afternoon of the 29th the American steamer *Sylvan Arrow*, southbound, ran across the northern edge of the storm southwest of the gulf, experiencing moderate to fresh easterly gales, with slight depression of the barometer, the greatest depth, 29.70 inches, occurring on the morning of the 30th, in 14° 34′ N., 95° 41′ W. The American steamer *Tuscaloosa City*, Colon to Honolulu, encountered an east gale of force 11 at 1.30 p. m. of the 30th, barometer 29.48, in 14° 28′ N., 97° 26′ W., and the S. S. *Pennsylvania* had a northeast hurricane, lowest pressure 29.21 inches, at 8.30 p. m., in 15° 00′ N., 97° 30′ W. The S. S. *Nebraskan*, northbound, reported "continuous heavy rain from noon, May 30, to 4 a. m. June 1, wind increasing to whole gale force at times."

This is the second May cyclone in these waters of which the Weather Bureau has record; it is also the only hurricane of the month, the earlier being the moderate disturbance of May 24–27, 1928.

The weather at Honolulu was drier and warmer than usual for the month. The trades blew during 90 per cent of the time, with winds from the east prevailing. The highest velocity was at the rate of 23 miles an hour from the northeast, on the 14th.

As summer conditions began settling in on the Pacific, fog increased in area and in number of days of formation over upper latitudes and locally in lower latitudes. This increase in May was especially pronounced along the American coast and over a great region generally southeast of the Kuril Islands. East of northern Japan for an approximate distance of 1,000 miles at sea fog became more and more frequent as the month wore on, the percentage of days with it for the entire period rising to 30 or 35 in some 5° squares. Twenty per cent of the days were foggy off the central California coast, and along the western length of Lower California to and below Cape San Lucas, fog was reported on 9 days, mostly during the early half of the month.

Note.—American steamer *President Taft*, Capt. K. A. Ahlin, Yokohama to Victoria, May 24–June 2. Observer, B. H. Bassett, third officer: "This trip has been very unusual in having continuous overcast weather. Southerly winds with fog and southeasterly winds with rain predominated. No wind from the north quadrants were experienced after leaving the Japanese coast."

Typhoon in the North Pacific Ocean, April, 1929.—According to a clipping from the San Diego Union, of May 24 (San Diego, Calif.), the American steamer *Edgefield*, Capt. W. H. Walker, experienced a heavy typhoon "near the Philippines" on April 25, 1929, with the barometer down to 28.10 and the wind blowing at 115 miles an hour. The paper quoted Captain Walker as saying:

"The emergency steering gear and all movable equipment on the deck was carried away. Electric light wiring to the deck house was torn away and the radio room destroyed. Paint was blown off the ventilators, and an intense feeling of suffocation was felt while the ship floundered around in the vortex of the gale."—*W. E. Hurd.*

Mirage in the Red Sea.—The following communications from observers on board vessels bound from the Indian Ocean toward Suez relate to special atmospheric conditions experienced in and near the Red Sea.

Dutch cargo steamer *Stadsdijk*, Capt. D. C. Wijers, observer K. Rodenhuis: "On May 4, in the Gulf of Suez, we perceived much looming of ships, lighthouses, and coast in the neighborhood. After sunset the lights of Ras Gharib, Zafarana, and Abu Deraj were seen at twice their usual distance. The barometer followed its daily alterations. Temperature of air was 28° (82° F.), and of sea water at surface 24° to 22° (75° to 72° F.). No wind observable."

British steamer *Donax*, Captain and observer C. Howe: "May 5, abnormal refraction. At 2100 light E'ly airs and heavy dew. The Brothers Light (Red Sea) was sighted bearing 323° dist. 54′. This light disappeared at 2104 until 2120. The light was then in sight continuously, varying from full brilliancy to a loom. At this time it was impossible to get even an approximation of the horizon, sky and sea appearing to run into one."—*W. E. Hurd.*

TYPHOONS AND DEPRESSIONS

By Rev. José Coronas, S. J.
[Weather Bureau, Manila, P. I.]

The first typhoon over the Philippines in 1929.[1]—The first typhoon of 1929 [1] did not appear clearly in our weather maps until 6 a. m. of May 24, when it was only 100 miles east of Samar, thus giving rather a short time for proper warnings. Its center traversed Samar Island moving WNW. or NW. by W. during the night of May 24 to 25, and reached the Strait of San Bernardino in the early morning of the 25th. From the Strait of San Bernardino it continued moving WNW. until the afternoon of the 25th, when it began to move northward across the Ragay Gulf. This northerly direction was kept until after midnight when it inclined again northwestward traversing with this direction the northernmost part of Luzon on the 26th. Then, on the 27th it recurved to ENE. and E. by N. across the Balintang Channel.

It was not a severe typhoon, the barometric minimum so far reported from our stations being that of Guiuan 747.51 mm. (29.31 ins., not corrected for gravity) at 4.30 p. m. of the 24th.

The approximate positions of the center at 6 a. m. of May 24 to 28 were as follows:

May 24, 127° 30′ long. E.; 11° 25′ lat. N.
May 25, 124° 30′ long. E.; 12° 25′ lat. N.
May 26, 122° 00′ long. E.; 17° 05′ lat. N.
May 27, 123° 30′ long. E.; 20° 00′ lat. N.
May 28, 129° 10′ long. E.; 20° 05′ lat. N.

Due probably to local conditions, even though the center of the typhoon did not touch the Province of Leyte, reports have been received of extensive damage done to the crops by heavy rains and floods with loss of over 100 lives in several towns of the southern part of that Province.

[1] A press report, quoted in the preceding article, indicates the occurrence of a typhoon at the end of April, but no other information regarding such a storm has been received to date by the Weather Bureau.—*W. E. H.*